

## CLAIMS

What is claimed is:

- 1           1.       A multiple wavelength output light source, comprising:  
2           a laser device having a plurality of output wavelengths;  
3           a demultiplexer for separating the plurality of output wavelengths; and  
4           a plurality of modulators associated with and configured to modulate each  
5           wavelength.
- 1           2.       The light source of claim 1, wherein the laser device, the plurality of  
2           modulators and the demultiplexer are fabricated on one substrate and comprise one  
3           module.
- 1           3.       The light source of claim 1, wherein the plurality of output wavelengths  
2           represents the output spectrum of the laser device.
- 1           4.       The light source of claim 1, further comprising an optical filter  
2           configured to receive the plurality of output wavelengths and modify each wavelength  
3           to a predetermined profile.
- 1           5.       The light source of claim 1, wherein the laser device is a Fabry-Perot  
2           laser.

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1           6.     The light source of claim 1, further comprising a combining device  
2     configured to combine each of the plurality of modulated wavelengths onto a single  
3     optical fiber.

1           7.     The light source of claim 1, wherein the laser device has a spectral  
2     distribution including distinct peaks, each of the output wavelengths corresponding to  
3     a different one of the peaks.

1           8.     A method for forming a broad spectrum modulated laser output, the  
2     method comprising:  
3             providing a laser device having a plurality of output wavelengths;  
4             separating the plurality of output wavelengths; and  
5             modulating each of the plurality of output wavelengths.

1           9.     The method of claim 8, further comprising forming the laser device and  
2     performing the modulating step and the separating step on a single module.

1           10.    The method of claim 8, wherein the plurality of output wavelengths  
2     represents the output spectrum of the laser device.

1           11.    The method of claim 8, further comprising modifying each wavelength  
2     to a predetermined profile.

1           12.    The method of claim 8, wherein the laser device is a Fabry-Perot laser.

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1           13.    The method of claim 8, further comprising combining each of the  
2    plurality of modulated output wavelengths onto a single optical fiber.

1           14.    A method for forming a broad spectrum modulated laser output, the  
2    method comprising the steps of:

3           providing a Fabry-Perot laser device having a plurality of outputs, each output  
4    at a different spectral location;

5           separating the plurality of outputs; and

6           modulating each of the plurality of outputs with communication information  
7    resulting in a plurality of modulated outputs.

1           15.    The method of claim 14, further comprising forming the Fabry-Perot  
2    laser device and performing the modulating step and the separating step on a single  
3    module.

1           16.    The method of claim 14, wherein the plurality of output wavelengths  
2    represents the output spectrum of the laser device.

1           17.    The method of claim 14, further comprising modifying each wavelength  
2    to a predetermined profile.

1           18.    The method of claim 14, further comprising combining each of the  
2    plurality of modulated outputs onto a single optical fiber.

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1 19. An optical system comprising:  
2 a laser that outputs plural wavelengths; and  
3 modulator means for modulating each of the wavelengths independently.

1 20. The apparatus of claim 19, further comprising separator means for  
2 spatially separating the plural wavelengths upstream of their modulation by the  
3 modulator means.

1 21. The apparatus of claim 20, further comprising combiner means for  
2 spatially combining the wavelengths as modulated by the modulator means.

1 22. The apparatus of claim 19, wherein the laser has a spectral distribution  
2 including distinct peaks, each of the wavelengths corresponding to a different one of  
3 the peaks.

1 23. An optical method comprising:  
2 operating a laser to provide an output characterized by plural wavelengths; and  
3 modulating the plural wavelengths independently.

1 24. The method of claim 23, further comprising separating the plural  
2 wavelengths upstream of the modulating.

1 25. The method of claim 24, further comprising combining the wavelengths  
2 downstream of the modulating.

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- 1           26.    The method of claim 23, wherein the wavelengths correspond to
- 2           distinct peaks in the spectral distribution of the output of the laser.

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